In the claims:

1. (Currently Amended) A method for dewatering a slurry of titanium dioxide having an initial specific gravity of from about 1.01 to about 1.8 using a filtration system comprising a filter stack, a means for oscillating said filter stack, a feed tank, a permeate holding tank, a concentrate removal line and a water source, said filter stack comprising filter disks and diverter trays, wherein the method comprises the steps of:

initially removing a sufficient quantity of said slurry having a specific gravity of from about 1.2 to about 1.8 from said feed tank such that addition of water or permeate to the remaining slurry in said feed tank will yield a slurry having a specific gravity ranging from about 1.01 to about 1.1;

passing permeate fluid from said permeate holding tank through said filter stack for period of time ranging from about 20 minutes to about 16 hours [sufficient to wet said filter disks and diverter trays];

initiating fluid flow from said feed tank while directing concentrate flow from said filter stack to said feed tank;

[adding slurry to said feed tank;]

increasing the specific gravity of the slurry in said feed tank at a rate of about 0.1 per hour to a range of about 1.4 to about 1.8, wherein following the increase in specific gravity of said slurry entering said filter stack, said concentrate removed from said filter stack has a specific gravity ranging from about 2.0 to about 2.3 and said permeate removed from said filter stack has a specific gravity ranging from about 1.0 to about 1.1;

adjusting fluid pressure of fluid entering said filter stack to a pressure between about 275 kPa and about 830 kPa;

initiating oscillation of said filter stack; and,

subsequently setting the oscillation amplitude of said filter stack to a distance between about 0.6 cm and about 3.8 cm.

2. (Cancelled)

3. (Original) The method of claim 1, wherein the slurry added to said feed tank has a specific gravity of from about 1.4 to about 1.53.

4. (Original) The method of claim 1, wherein said filter stack is initially oscillated at an amplitude between about 0.32 cm and about 1.3 cm.

5. (Original) The method of claim 4, wherein said filter stack is initially oscillated for a period of time ranging from about 30 to about 120 minutes at the first amplitude setting and is subsequently oscillated for a period of time of about 4 hours at a second amplitude setting.

6. (Original) The method of claim 4 , wherein the final oscillation amplitude is maintained between about 1.9 cm and about 2.2 cm.

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Original) The method of claim 1, wherein the permeate fluid passes through said filter stack for a period of time ranging from about 1 to about 2 hours.

12. (Original) The method of claim 1, wherein the permeate fluid stream exits the filter stack at a fluid pressure of about 34 kPa to about 172 kPa.

13. (Original) The method of claim 1, wherein the permeate fluid stream exits the filter stack at a fluid pressure of about 82 kPa to about 110 kPa.

14. (Original) The method of claim 1, further comprising the steps of:

monitoring concentrate flow rate and specific gravity;

stopping the flow of slurry from said feed tank following detection of a concentrate specific gravity of greater than about 2.3 when processing a slurry containing the anatase form of titanium dioxide and greater than 2.2 when processing a slurry containing the rutile form of titanium dioxide;

flushing said filter stack;

restoring slurry flow from said feed tank; and,

continuing to monitor concentrate flow rate and specific gravity.

15. (Original) The method of claim 14, wherein said step of flushing said filter stack is achieved by replacing the slurry flow from said feed tank with permeate flow obtained from said permeate holding tank.

16. (Original) The method of claim 14, wherein said filter stack is flushed for a period of time of at least 100 seconds.

17. (Original) The method of claim 14, wherein said filter stack is flushed for a period of time of at least 200 seconds.

18. (Original) The method of claim 14, wherein said filter stack is flushed for a period of time of at least 300 seconds.

19. (Original) The method of claim 14, wherein the step of flushing takes place for a period of time sufficient to lower the concentrate specific gravity to a range of about 1.0 to about 1.2.

20. (Currently Amended) A method for dewatering a slurry of titanium dioxide having an initial specific gravity of about 1.01 or greater using a filtration system comprising a filter stack,

a means for oscillating said filter stack, a feed tank, a permeate holding tank, a concentrate removal line and a water source wherein the method comprises the steps of:

removing slurry from said feed tank;

when said slurry in said feed tank initially has a specific gravity of about 1.2 or greater, adding sufficient water or permeate to said feed tank to reduce the specific gravity of the slurry stored in said feed tank to a range of about 1.01 to about 1.1;

passing permeate fluid from said permeate holding tank through said filter stack for period of time ranging from about 20 minutes to about 16 hours;

initiating fluid flow from said feed tank while directing concentrate flow from said filter stack to said feed tank;

adding slurry to said feed tank thereby increasing the specific gravity of the slurry in said feed tank to a range of about 1.2 to about 1.8 whereby the rate of increase of the specific gravity of the slurry in said feed tank is about 0.1 per hour;

initiating oscillation of said filter stack;

increasing the oscillation amplitude of said filter stack;

setting the oscillation amplitude of said filter stack to a distance between about 0.6 cm and about 3.8 cm;

increasing the specific gravity of the slurry in said feed tank; and,

removing concentrate and permeate from said filter stack, said concentrate removed from said filter stack has a specific gravity ranging from about 2.0 to about 2.3 and said permeate removed from said filter stack has a specific gravity ranging from about 1.0 to about 1.

21. (Original) The method of claim 20, further comprising the steps of:

monitoring concentrate flow rate and specific gravity;

stopping the flow of slurry from said feed tank following detection of a concentrate specific gravity of greater than about 2.3 when processing a slurry containing the anatase form of titanium dioxide and greater than about 2.2 when processing a slurry containing the rutile form of titanium dioxide;

flushing said filter stack; and,

restoring slurry flow from said feed tank while continuing to monitor concentrate flow rate and specific gravity.

22. (Cancelled)

23. (Original) The method of claim 20, wherein the slurry added to said feed tank has a specific gravity of from about 1.4 to about 1.53.

24. (Original) The method of claim 20, wherein said filter stack is initially oscillated at a n amplitude between about 0.32 cm and about 1.3 cm.

25. (Original) The method of claim 24, wherein said filter stack is initially oscillated for a period of time ranging from about 30 to about 120 minutes at the first amplitude setting and is subsequently oscillated for a period of time of about 4 hours at a second amplitude setting.

26. (Original) The method of claim 24, wherein the final amplitude is between about 1.9 cm and about 2.2 cm.

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Original) The method of claim 20, wherein the permeate fluid passes through said filter stack for a period of time ranging from about 1 to about 2 hours.

31. (Original) The method of claim 21, wherein said step of flushing said filter stack is achieved by replacing the slurry flow from said feed tank with permeate flow obtained from said permeate holding tank.

32. (Original) The method of claim 21, wherein the step of flushing said filter stack takes place for a period of time of at least 100 seconds.

33. (Original) The method of claim 21, wherein the step of flushing said filter stack takes place for a period of time of at least 200 seconds.

34. (Original) The method of claim 21, wherein the step of flushing said filter stack takes place for a period of time of at least 300 seconds.

35. (Original) The method of claim 21, wherein the step of flushing said filter stack takes place for a period of time sufficient to lower the concentrate specific gravity to a range of about 1.0 to about 1.2.

36. (Currently Amended) A method for dewatering a slurry of titanium dioxide having an initial specific gravity of from about 1.01 to about 1.8 using a filtration system comprising a filter stack, a means for oscillating said filter stack, a feed tank containing a slurry, a permeate holding tank, a concentrate removal line and a water source wherein the method comprises the steps of:

when said slurry in said feed tank initially has a specific gravity of about 1.2 or greater, lowering the specific gravity of s aid slurry stored in said feed tank to a range of about 1.0 to about 1.1;

passing permeate fluid from said permeate holding tank through said filter stack for period of time ranging from about 20 minutes to about 16 hours, said permeate fluid having a specific gravity between about 1.0 and about 1.1;

initiating fluid flow from said feed tank while directing concentrate flow from said filter stack to said feed tank;

adding slurry having a specific gravity of from about 1.2 to about 1.8 to said feed tank;

initiating oscillation of said filter stack at an amplitude between about 0.32 cm and about 0.6 cm;

increasing oscillation of said filter stack to an am plitude between about 0.6 cm and about 1.3 cm;

subsequently setting the oscillation of said filter stack to an amplitude between about 0.6 cm and about 3.8 cm;

increasing the specific gravity of the slurry in said feed tank to a range of about 1.2 to about 1.8;

removing concentrate and permeate from said filter stack, said concentrating having a specific gravity ranging from about 2.0 to about 2.2 when processing a slurry containing the rutile form of titanium dioxide, said concentrate having a specific gravity ranging from about 2.0 to about 2.3 when processing a slurry containing the anatase form of titanium dioxide and said permeate having a specific gravity ranging from about 1.0 to about 1.1;

monitoring concentrate flow rate and specific gravity;

flushing said filter stack by replacing the slurry flow from said feed tank with permeate flow obtained from said permeate holding tank for a period of time sufficient to lower the concentrate specific gravity to a range of about 1.0 to about 1.2 upon detection of a concentrate specific gravity of greater than 2.2 when processing a slurry containing the rutile form of titanium dioxide and greater than 2.3 when processing a slurry containing the anatase form of titanium dioxide; and,

restoring slurry flow from said feed tank while continuing to monitor concentrate flow rate and specific gravity.

37. (Original) The method of claim 36, wherein the permeate fluid passes through said filter stack for a period of time ranging from about 1 to about 2 hours.

38. (Original) The method of claim 36, wherein said filter stack is initially oscillated at an amplitude of about 0.32 cm to about 0.6 cm for about 30 to about 120 minutes.

39. (Original) The method of claim 36, wherein the step of oscillating said filter stack at an amplitude between about 0.6 cm and about 1.3 cm is maintained for about 4 hours.

40. (Original) The method of claim 36, wherein the final oscillation amplitude is maintained between about 1.9 cm and about 2.2 cm.

41. (Original) The method of claim 36, wherein the step of increasing the specific gravity of the slurry in said feed tank to a range of about 1.1 to about 1.8 occurs over a period of time at a rate of increase of about 0.10 per hour.

42. (Cancelled)

43. (Original) The method of claim 36, wherein the step of flushing lasts for a period of time of at least 100 seconds.

44. (Original) The method of claim 36, wherein the step of flushing lasts for a period of time of at least 200 seconds

45. (Original) The method of claim 36, wherein the step of flushing lasts for a period of time of at least 300 seconds

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